Survey of Income and Program Participation (SIPP) Webinar Series: Webinar #1 – An Overview of the 2014 SIPP Panel

June 3, 2019

Presenter: Matthew Marlay

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SIPP Webinar Series

- Webinars on key SIPP topics, presented throughout June 2019
- Explore 2014 Waves 1 and 2 public-use data
- Supplemental materials include exercises and handouts for most topics
- Recorded and posted for later reference
- Learn more at: https://www.census.gov/data/academy/webinars/upcoming.html

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SIPP Webinar Series

You will have the opportunity to learn about the different topics and subjects areas in the 2014 SIPP. Each session will provide an overview of key topics using public-use data. This webinar series is for new and experienced users of SIPP data. Here are the topics:

TOPIC:	SESSION DATE:
Overview	June 3, 2019
Demographics and Residences	June 4, 2019
Jobs	June 17, 2019
Assets, Income, and Poverty	June 18, 2019
Programs, Adult Well-Being, and Food Security	June 20, 2019
Health Insurance, Health Care Utilization, and Disability	June 24, 2019
Family and Fertility	June 25, 2019

SAVE THE DATE: All webinars are FREE and start at 2:00 PM EDT

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Today's Webinar

1. SIPP background and history
2. Survey and sample design
3. Content overview
4. Processing overview
5. Data overview
6. Resources for participants

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SIPP Background and History

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SIPP's Mission

Provide a nationally representative sample to evaluate:

- Annual and sub-annual dynamics of income
- Movements into and out of government transfer programs
- Family and social context of individuals and households
- Interactions between these items

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SIPP's Advantages

- Comprehensive, detailed data on a variety of topical areas
- Measures dynamics of:
  - Households
  - Families
  - Individuals
- Longitudinal
- Follows movers

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SIPP's History

- First panel began in 1984
- 1984-1993 panels:
  - Paper instrument
  - Overlapping panel design
- 1996 panel:
  - Converted to CAPI (DOS-based instrument)
  - Abutting (end-to-end) panels
- 2014 panel:
  - Most significant changes since survey began
  - Ran 2014-2017

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Classic SIPP Design

- 4-month recall period
  - 3 interviews per year
- Sample divided into 4 rotation groups for monthly interviewing
- Some questions asked every interview
  - "Core" content
- Other questions only asked annually, once per panel, etc.
  - "Topical module" content

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2014 Reengineering: Key Design Changes

- Annual interview
  - 12-month reference period
- Event History Calendar (EHC) methods
  - Facilitates respondent recall over longer reference period

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2014 Reengineering: Key Design Changes

Re-Engineered SIPP 2015 Ver 7.08--07/23/2014

F3-Check Progress   F10-Exit EHC

Topic	REFERENCE YEAR 2013												INTERVIEW YEAR 2014					
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Residency																		
Marital History																		
Education																		
Job 1																		
Job 2																		
Job 3																		
Job 4																		
Job 5																		
Job 6																		
Job 7																		
More Jobs (if any)																		
No Job																		
SSI																		
Food Stamps																		
TANF																		
Gen. Assist.																		
WIC																		
Private 1																		
Private 2																		
Medicare																		
Medical Assista...																		
Military																		
Other Coverage																		

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2014 Reengineering: Key Design Changes

- Scope is generally similar to SIPP Classic
  - Broader than core
  - Includes key topical module content in each wave
- Better integration of concepts
  - EHC generates integrated reporting across domains
  - Topics previously implemented as add-on modules now integrated

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Summary: New vs. Classic SIPP

	NEW SIPP	SIPP CLASSIC
Instrument	Blaise/C#	DOS-based
Interview Type	Personal visit/telephone	Personal visit/telephone
Interview Frequency	Annual	3x/year
Reference Period	Previous year	Previous 4 months
Panel Length	4 years (anticipated)	2.5-5 years
Sample Size	53,000 households (W1)	11-45,000 households (W1)
Universe	Civilian, non-institutional	Civilian, non-institutional
Content	Comprehensive	Comprehensive
File Structure	Simplified	Complex

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2014 SIPP: SSA Supplement

- Collected on behalf of the Social Security Administration
- Data collection September-November 2014
- Telephone survey of interviewed Wave 1 SIPP adult respondents
- Includes marital history, pension receipt, and disability questions not included in SIPP interview

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Survey/Sample Design

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Survey Universe

- Civilian, non-institutional population of the United States
- Coverage of infants (less than 1 year old at time of interview):
  - Listed on household rosters
  - Available to be selected on other household members' questions
  - No specific information collected about them
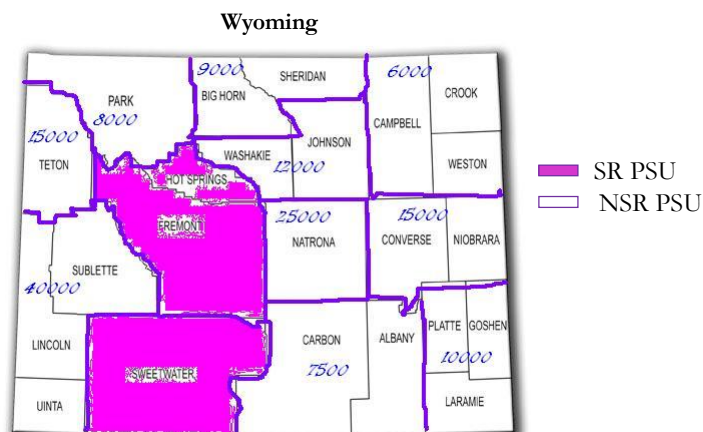   - But some is imputed

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Sample Design

- Sample universe mostly based on the 2010 Decennial Census frame
  - SIPP first Census Bureau survey to use updated frame
- Drawn from Master Address File (MAF)
  - Un-duplication with other surveys
  - Housing unit eligible for sampling 5 years after their last interview

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Adapted from Westra and Sundukchi (2017)

Sample Design

- Two-stage stratified sample:
  1. Selection of Primary Sampling Units (PSUs)
  2. Selection of addresses within PSUs
- What is a PSU?
  - A county, if county has at least 7,500 people
  - Combination of contiguous counties, if below 7,500 people
- Two kinds of PSU:
  1. Self-representing (SR): 100,000+ housing units
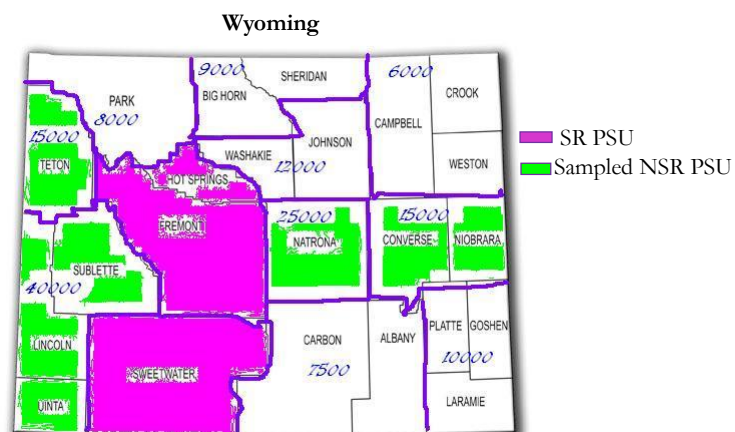 2. Non-self-representing (NSR): < 100,000 housing units

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17   *Adapted from Westra and Sundukchi (2017)*

Sample Design

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Sample Design

- Self-representing (SR) PSUs are automatically included in SIPP sample
- Non-self-representing (NSR) PSUs are stratified and selected with probability proportionate to size
  - Since PSUs are county-based, all stratification and sampling happens within-state
- 2014 sample contains 344 SR PSUs and 476 NSR PSUs

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Sample Design

Wyoming

SR PSU
Sampled NSR PSU

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Adapted from Westra and Sundukchi (2017)

Sample Design

- Once PSUs selected, addresses selected within each PSU
- Addresses stratified by income (poverty) status
- We oversample in low-income strata to increase poverty cases in sample
- This provides our final household sample
  - 53,070 housing units in 2014 Wave 1

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Adapted from Westra and Sundukchi (2017)

Oversampling

- Poverty status determined using 2007-2011 ACS data
- Within each selected PSU, housing units are split into high-income and low-income based on the ACS-defined areas
- Sample low-income housing units at a higher rate
  - Yields about a 28% increase in cases at or near poverty

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Adapted from Westra and Sundukchi (2017)

State Estimates

- Sample design is both nationally representative and state representative
  - PSU stratification is done within states, so state sample represents only that state
- Added sample in some selected states to increase the reliability of estimates from those states

23　　*Adapted from Westra and Sundukchi (2017)*

Sample Distribution

- Generally follows population distribution
- More sample in metropolitan areas
- Sample in rural areas is targeted to be about 25 cases
  - NSR PSUs average about 25 cases

24　　*Adapted from Westra and Sundukchi (2017)*

Weighting Design

- The **weight** is the number of units in the population that the responding unit represents
- Weights intended to make final dataset representative of survey universe (civilian, non-institutionalized U.S. population)

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Adapted from Westra and Sundukchi (2014)

Weighting Design

- Without weights, estimates would be biased due to:
  - Complex sample design
  - Oversampling low income (overrepresentation)
  - Differential nonresponse
- In the weighting process we use population totals for each of the states to ensure that the sum of the weights will match these totals for the specified age, race, and sex breakdowns

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Adapted from Westra and Sundukchi (2014)

Weighting Design

- Weights provided at person level
  - Can create family/household weights by using:
    - Person weight of family reference person
      - WPFINWGT where RFAMREF = PNUM
    - Person weight of householder
      - WPFINWGT where ERELRPE in (1, 2)
    - Average person weights of family/household members
- And at multiple timeframes
  - Monthly
  - Calendar year (Use the December monthly weight)
  - Panel (FINPNL14 variable; Waves 2+ only)

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Construction of Monthly Person Weights

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28   *Adapted from Westra and Sundukchi (2014)*
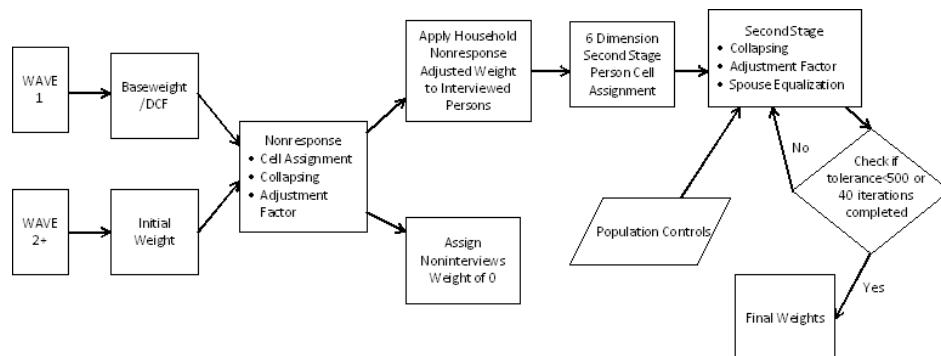
Base Weight (BW)

- The inverse of the probability of a sample unit's address being selected

- If a county has a population of 50,000 households and we sample 20 of them, then each of the sampled households has a base weight of 2,500 (= 50,000/20)

- A household weight of 2,500 means a sampled household represents 2,500 households in the population

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Adapted from Westra and Sundukchi (2014)

Adjustments to Base Weights

- Duplication Control Factor
  - Adjusts for subsampling done out in the field

- Nonresponse adjustment
  - Distributes the base weights of the non-interviewed households to those that are interviewed

- Second stage adjustment
  - Adjusts the weights to correspond to the population at the reference time rather than the 2010 Census

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Duplication Control Factor

- When clusters are larger than expected, subsampling is done in the field
- This changes a household's probability of being selected, so base weight must be adjusted by a factor called the duplication control factor (DCF):
  - Weight = Base weight x DCF

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Nonresponse Adjustment

- Adjusts for households that are eligible but not interviewed
- Their base weights get distributed among the interviewed households
- Example: If only 16 of the 20 sampled households were interviewed, each weight of the 16 interviewed must be increased to account for the 4 not interviewed:
  - 2,500 x (20/16) = 3,125
  - 50,000/16 = 3,125

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Adapted from Westra and Sundukchi (2014)

Second Stage Adjustment

- Brings the sample estimates into agreement with independent monthly estimates of population totals
- The characteristics used for calibration include state, age, race, sex, Hispanic origin, family relationship, and household type
- Done at the person level rather than household level

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Adapted from Westra and Sundukchi (2014)

Weighting Summary

- The final person weight is the product of:
  - Base weight
  - Duplication Control Factor
  - Non-interview Adjustment Factor
  - Second Stage Adjustment Factor
- Can derive a household/family weight using:
  - The monthly person weight of the household/family reference person
  - The average of the person weights for household/family members

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Adapted from Westra and Sundukchi (2014)

Content Overview

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Some Important Definitions

- Respondent: Someone in the household for whom SIPP collects information
- Household respondent: The first eligible adult household member interviewed
- Reference person: The owner or renter of the housing unit (the first, if more than one resident owns/rents the unit)

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Some Important Definitions

- <u>Type 2 person</u>: A person who lived with a respondent during the reference year but not at time of interview
  - Does not get a person record
  - Can be at any address where a respondent lived, not just interview address
- <u>Adult</u>: Someone 15 years old or older
- <u>Family</u>: A set of people related by blood, marriage, or adoption
- <u>Household</u>: A set of people living together

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Some Important Definitions

- <u>Self vs. proxy</u>: How we collect information for a given respondent
  - <u>Self-response</u>: Respondent provides information for him/herself
  - <u>Proxy response</u>: Another adult in the household provides information for respondent
    - Everyone under 15 is a proxy by design – an adult provides a child's interview information

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Some Important Definitions

- <u>Coverage unit</u>: A set of people covered by a health insurance policy or an assistance program
  - May include one person, some people in the household, or all household members
  - Also known as a program unit

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2014 SIPP: Content Summary

- Coverage Questions
- Roster
  - Sex
  - Birthdate/Age
- Demographics
  - Hispanic origin
  - Race
  - Citizenship
  - Language
  - Marital status
  - Parent/child relationships
  - Educational attainment
  - Armed forces status
  - Type 2 people
  - Program/income screeners
- Event History Calendar
  - Residency
  - Marital history
  - Educational enrollment
  - Jobs/Time not working
  - Program receipt
  - Health insurance

- Post-EHC Questions
  - Health insurance
  - Dependent care
  - Non-job income
  - Program income
  - Asset ownership
  - Household expenses
  - Health care utilization
  - Medical expenditures
  - Disability
  - Fertility history
  - Biological parents' nativity and mortality
  - Child care
  - Child well-being
  - Adult well-being
- Closing Screens
  - Contact information
  - Moving intentions

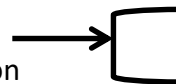United States Census Bureau
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2014 SIPP: Content Highlights

Demographics:

- Roster: Interview-month household residents
- Roster of people you lived with during the year but who aren't in the interview month household (Type 2)
- Age, race, Hispanic origin, sex
- Household relationships, including options for same-sex partners and spouses
- Marital status, spouse pointer, year of marriage, times married, ever widowed, ever divorced, fertility screener

| Address verification |
| Sample address characteristics and coverage |
| Roster creation and demographics |
| Type 2 Roster/Info |
| Additional person level demographics |
| Income and program screener |
| Residence History |
| Marriage and Cohabitation |
| School Enrollment |
| Labor Force (Jobs, Businesses, Contingent Work, Unemployment, Not In Labor Force, Commuting, Work Schedule) |
| Programs (SSI,FS,TANF,GA,WIC) |
| Health Insurance (Private, Medicare, Medicaid, Military, Other) |
| Health insurance follow-up |
| Dependent care expenses |
| Social Insurance - Annual Programs - Other GI - Lump Sum - Child Support |
| Assets / Balances |
| Health (Medical Expenditures - Utilization, Disability |
| Fertility, Child Care, Child Well-Being |
| Housing - Material Wellbeing, Food Security, Basic Needs |
| Wrap-up and Missing Follow-up visit/call Info |
| Interview closeout |
| Contact history instrument (CHI) with Neighborhood Observations Module |

EVENT HISTORY CALENDAR (EHC)

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2014 SIPP: Content Highlights

Demographics:

- Gender neutral parent identification (Parent 1 and Parent 2)
  - Facilities same-sex parent identification
- Type of parent for parent 1 and 2
- Nativity, citizenship, year moved to U.S., immigration status
- Education: Attainment, vocational/technical, educational certificates, professional certifications and licenses
- Armed forces service: Veteran status, period of service, active duty

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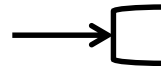
2014 SIPP: Content Highlights

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2014 SIPP: Content Highlights

Residency:

- Up to 5 residences during the reference period for each person
- Tenure status of each residence
- Public housing status: Housing subsidy receipt, voucher receipt
- Reason for moving to address
- Left censor: Year and month moved into January address, tenure of prior residence

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2014 SIPP: Content Highlights

Marital History:

- Up to 3 marital status spells
- Monthly marital status, with spouse pointer
- Monthly cohabitation status, with partner pointer
- Registered domestic partner item for cohabitations

EVENT HISTORY CALENDAR (EHC)
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2014 SIPP: Content Highlights

Educational Enrollment:

- Up to 3 spells of educational enrollment
- Grade attended
- School type (public, private, charter, home)
- Enrollment type (full-time/part-time)
- Grade repetition
- Head Start for children 7 and under

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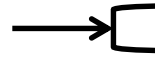U.S. CENSUS BUREAU
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2014 SIPP: Content Highlights

Labor Force:

- Up to 7 discrete job/business timelines, each with 2 spells possible
- Timeline for additional work beyond the first 7 jobs
- Type of pay/pay rate
- Job earnings and business profits
- # of hours usually worked per week
- Changes in earnings or hours worked (up to 3)
- Industry, occupation, and class of worker
- Business/employer information
- Union membership
- Incorporation status
- Presence of partners (business)
- Time away without pay

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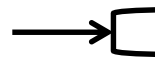Economics and Statistics Administration
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2014 SIPP: Content Highlights

Unemployment:

- Spells of unemployment
- Time away from work
- Time out of the labor force
- Reason not working
- Availability for work
- Reason not available for work

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2014 SIPP: Content Highlights

Commuting:

- Mode(s) of travel
- Time to work
- Miles to work
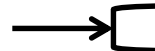- Costs for a typical week
- Reimbursement of costs

Work Schedule:

- Days worked
- Start and stop times
- Working from home
- Type of schedule
- Reason for schedule

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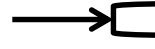
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2014 SIPP: Content Highlights

Programs:

- Supplemental Security Income (SSI)
- Temporary Assistance for Needy Families (TANF)
  - Pass-through child support payments
- Supplemental Nutrition Assistance Program (SNAP, aka Food Stamps)
- General Assistance (GA)
- Women, Infants, and Children's Nutrition Program (WIC)

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2014 SIPP: Content Highlights

Programs:

- Up to 3 spells per reference period recorded for each program
- Who in the household is covered
- Ownership of the coverage
- Reasons for starting and stopping
- Amount received each month

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2014 SIPP: Content Highlights

Health Insurance (in EHC):

- Private, Medicare, Medicaid, Military, and Other Coverage timelines
- Two timelines for private coverage to allow overlapping spells
- Who in the household is covered
- Ownership of the coverage
- Whether anyone outside household covered
- Type of coverage
- Cost
- Type of private plan
- Type of deductible
- For 2015: Exchange participation

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2014 SIPP: Content Highlights

Health Insurance Follow-up (post-EHC):

- Premiums and reimbursement
- Reconciliation of time without coverage
- Reasons no private if employed but not covered
- Reasons no public if not covered at all
- Reasons for not being covered

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2014 SIPP: Content Highlights

Programs (Annual and Other):

- Paid care of children or disabled persons so that a person could work, attend training, or look for work in December of reference year
- Total cost of that care in December
- Social Security retirement income and deductions for Medicare (monthly amts.)
- VA benefits (monthly amts.)
- Worker's compensation (monthly amts.)
- Unemployment compensation (monthly amts.)
- Energy assistance

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2014 SIPP: Content Highlights

Programs (Annual and Other):

- Free and reduced-price meal programs
- Lump-sum payments
- Disability income
- Retirement income
- Miscellaneous cash income
- Survivor benefits
- Child support and alimony received
- Support payments made
- EITC receipt and tax filing status
- Other training, food, clothing, cash, and housing assistance

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2014 SIPP: Content Highlights

Assets – Income, Joint Holdings, and Balances/Values for:

- Checking and savings
- Money market accounts or funds
- Certificates of deposit
- Mutual funds
- Stocks
- Municipal and corporate bonds
- Government securities and savings bonds
- Royalties
- Rental property and rental property mortgage balance
- Other mortgages
- Miscellaneous investments

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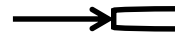U.S. CENSUS BUREAU
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2014 SIPP: Content Highlights

Other Assets:

- Real estate owned, market value, and balance owed
- Vehicles (up to 3 per household):
  - Use
  - Make
  - Model
  - Year
  - Balance owed
- Business value and debt
- Retirement account balances
- Unsecured liabilities

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EVENT HISTORY CALENDAR (EHC)

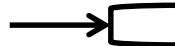| Address verification |
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2014 SIPP: Content Highlights

Medical Expenditures:

- Overall health status
- Medical out-of-pocket expenses
- Health care utilization
- Hospitalization
- Sick days
- Doctor visits
- Dental visits/teeth lost
- Drug coverage
- Insurance premium payments
- Medical visits by uninsured

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2014 SIPP: Content Highlights

Disability:

- For everyone: Sensory disabilities (sight and hearing)
- For adults: Serious difficulty concentrating, remembering, making decisions, walking or climbing stairs, dressing or bathing, doing errands, finding a job or remaining employed, prevented from working
- For children: Serious difficulty concentrating, remembering, making decisions, walking or climbing stairs, dressing or bathing, playing with children of the same age, doing regular school work
- For young children: A developmental condition or delay that limits ordinary activity
- SSA: Detailed adult, child, and work disability sections in the 2014 supplement

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2014 SIPP: Content Highlights

Fertility:

- Roster and ages for children birthed/fathered
- Multiple partner fertility indicator
- Grandparent indicator

Parents' Nativity and Mortality:

- Collected about both biological parents
- Country of birth
- Mortality status

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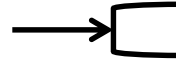U.S. CENSUS BUREAU
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2014 SIPP: Content Highlights

Child Care:

- Type of arrangements used
- Which children used each
- Weekly amount paid for child care
- Assistance with costs
- Time lost from work related to child care

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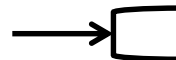
2014 SIPP: Content Highlights

Child Well-Being:

- Eating dinner with parents
- Reading to and outings with children under 6
- School engagement, school effort
- Grade repetition, suspension, expulsion
- Gifted classes
- Sports, lessons, club participation, religious lessons

Adult/Material Well-Being:

- Environmental noise, trash, safety
- Problems with housing, pests, plumbing
- Ability to pay mortgage or utilities

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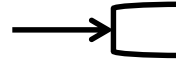U.S. CENSUS BUREAU
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2014 SIPP: Content Highlights

Food Security:

- Able to buy enough food

- Able to eat balanced meals

- Cut size of meals, and, if so, how often

- Defer food to children

- Hungry because not enough money for food

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Processing Overview

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New Processing System

- Besides a fully redesigned instrument, the 2014 data benefits from a fully redesigned processing system
- Rewrote and recoded all of the editing logic from scratch
- Converted programs from FORTRAN to SAS
- However, the basics of our processing strategy remain the same

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Item-Level Imputation

When a respondent is in universe for a question but does not provide an answer, we impute the missing value via:

1. Logical imputation
2. Hot-deck imputation
3. Cold-deck imputation

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Item-Level Imputation

- <u>Logical imputation</u> uses the respondent's answers to other related questions to derive the answer to the missing value
  - For example, if the respondent does not provide a state of birth for one child but an older and younger sibling were both born in Texas, we may set the missing state of birth to Texas
- This method is also used to edit provided answers for logical consistency

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Item-Level Imputation

- <u>Hot-deck imputation</u> uses the answer provided by a similar respondent as the answer to the missing value
  - For example, if the respondent does not provide a tenure value but similar respondents own their residences, we may set the missing tenure to 'Owned'
- Donors usually determined by demographic characteristics such as age, race, educational attainment, etc.
- Reproduces distribution of reported data

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Item-Level Imputation

- Cold-deck imputation uses a default answer as the answer to the missing value
- We never want to use a cold-deck value, but it is there as a last resort
- Usually the most common answer for the question

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Whole-Person Imputation

- In cases where we have no data at all for a person, previous SIPP panels used a similar person as a donor and substituted for the missing person
- This is a fairly crude method of imputation
- For 2014, replaced by…

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Model-Based Imputation

- Replaces existing whole-person imputation strategy with parametric model-based approach
  - Helps handle small stratifying cell size problem
  - Allows inclusion of many more predictor variables
  - SIPP Synthetic Beta (SSB) file provides the methodological foundation for modelling
  - Use administrative data to mitigate problems caused when survey data are not missing at random
    - Draws in data from outside the pool of survey respondents

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Model-Based Imputation

Problem:

- How to implement new imputation methods and still release data in a timely manner for a survey with 11,000+ variables?

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Model-Based Imputation

Solutions:

- Use topic flags as alternative to whole-record donation for cases in which respondent did not complete the whole sections of the survey

- Indicator variables for all major topics SIPP covers

- Implement new methods only for these 40+ variables
  - Then use regular logical/hot-deck imputation on subsequent specific questions

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Topic Flags: Description

- Survey instrument is divided into subject areas
- Each subject has 1 or 2 screener questions that determine if a respondent is asked the detailed questions for that topic
  - "Do you currently have a job or business or do any kind of work for pay?"
  - "Did you have a job or business or do any kind of work for pay at all since January 1, 2013?"
- Topic flags summarize information contained in the screeners:
  - = 1 if respondent held a job in 2013
  - = 0 if the respondent did not hold a job in 2013
  - = missing if the respondent skipped the topic completely

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Topic Flags: Purpose

- Measure number of missing topics
- Facilitate imputation of missing data
  - Stop whole-person substitution
  - Preserve correlations across topics by estimating a joint distribution for imputation
  - Allow any reported data to be used, including from other family members
  - Use administrative data as additional predictors
- Use in downstream edits
  - Topic flag sets the universe for follow-up questions
  - Flags from other topics can be used in edits and hot decks

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Topic Flags: EHC List

- Educational Enrollment
- Employment (job lines 1-7)
- General Assistance
- SNAP
- SSI
- TANF
- WIC

- Health insurance
  - Private
  - Medicaid
  - Medicare
  - Military
  - Other

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Topic Flags: Non-EHC List

- Biological parent (fertility)
- Dependent care
- Disability - adult and child functional limitations (seeing, hearing, etc.)
- Disability (difficulty finding or keeping a job because of disability)
- Disability (not being able to work because of disability)
- Disability payments
- Energy assistance
- Lump sum payments
- Retirement
- Retirement payments
- Life insurance
- School lunch
- School breakfast
- Social Security - adults
- Social Security - kids
- Survivor payments
- Unemployment compensation
- Veterans affairs benefits
- Worker's compensation

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Some Example Model Results

Overall percentages for cases where SIPP respondent answered the first question about jobs held (94.5% of in-universe respondents)			
Worked for pay in 2013?		**W-2/Schedule C positive earnings in 2012?**	
Yes	58.2	Yes	58.1
No	41.8	No	41.9

Overall percentages for cases where SIPP respondent DID NOT answer the first question about jobs held and Topic Flag was imputed (5.5% of in-universe respondents)			
Worked for pay in 2013?		**W-2/Schedule C positive earnings in 2012?**	
Yes	61.5	Yes	60.4
No	38.5	No	39.6

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Status Flags

- Provide information about the variables in the dataset
- Denoted by an 'A' as the first character of the flag name
- One status flag for each variable in the dataset
  - For example, ETENURE has a corresponding status flag called ATENURE
- Formerly known as allocation flags
- Now contain much more information

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Status Flags

Flag values:
 0. Not in Universe (NIU)
 1. In universe; as reported
 2. Statistical (hot deck) imputation
 3. Logical imputation
 4. Model-based imputation
 5. Cold deck imputation
 6. Imputed from a range
 7. Combination of 1 and 2/3/5/6
 8. Combination of 2/3/5/6
 9. Determined from status flags of component variables

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Continuation Flags

- EHC data are collected through the month of the interview, but only released through the end of the reference year
  - As a result, you don't know if the spell ended in December or is ongoing
- For EHC content, we provide continuation flags for spells where the end month is December (i.e., EMONTH = 12)

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Continuation Flags

- Flag values vary by topic, but indicate that the spell:
  - Ended in December (month 12)
  - Ended after month 12 but before the interview
  - Was ongoing as of the interview

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Data

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SIPP Pros and Cons

- SIPP is good for:
  - Generating monthly national-level estimates
  - Generating annual estimates
  - Longitudinal analysis over the panel
  - Analyzing the income of the poor
- SIPP is not as good for:
  - Long-term longitudinal analyses
  - Analyzing the top of the income distribution

84   *Adapted from Luke Shaefer (2015)*

Data Tips

- Our datasets are provided in SAS and ASCII format
  - Starting with the 2014 panel, we are making the files available in Stata format, too
- For Stata users, a good resource is Savastata
  - User-driven Stata command saves SAS datasets as Stata datasets
  - http://www.cpc.unc.edu/research/tools/data_analysis/sas _to_stata/transfer-tools/savastata.html
  - A parallel command goes in the opposite direction

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Adapted from Luke Shaefer (2015)

Data Management

- SIPP files have many variables for many observations
  - Each person has 12 observations
  - There are ~2,500 variables on the public-use file
- Can lead to serious memory limitations
- Check the capacity of your machine
  - Worth working on a well-equipped machine
- When you load in a dataset, keep only the observations and variables you need

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Data Management

- Keep your complete SIPP files in their original state
  - Don't change them or save on them
  - Always clear without saving
- For your analyses, create a single SAS program/Stata do file for dataset construction, which pulls the variables and observations from the panels and waves that you need
  - Save that new dataset, without all the SIPP variables and observations you don't need, and work from that
- With this program created, it is easy to always go back and reconstruct a dataset with added variables

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File Operation Basics

Programming best practices:

- Construct all analyses in a permanent set of SAS program/Stata do files:
  1. A dataset construction file that loads in wave files, other data files, and drops unnecessary variables (leaving your wave files unchanged)
  2. A variable construction file that reshapes variables (and maybe file format) as you need them for the analysis
  3. A set of analysis files that log and run each analysis (table1; table 2; and so on)
- Using this structure makes it easier to:
  - Add variables to your dataset and reconstruct
  - Find mistakes, because you will know where to look
  - Re-run analyses and precisely replicate your results

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File Operation Basics

Variable naming scheme:

- 'E' variables: The edited version of a variable (ETENURE, ESEX, etc.)
- 'A' variables: The corresponding status flag for each variable (ATENURE, ASEX, etc.)
- 'T' variables: Top-coded (or bottom-coded) continuous variables, or collapsed categorical variables (TAGE, TLIVQTR, etc.)
- 'R' variables: Variables that are not directly asked of respondents but are created from other variables (RLNGISOL, RMOVER, etc.)

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File Operation Basics

- Identifying unique respondents (Wave 1)
  - Because there are 12 observations per person, per wave, you need a person identifier to identify unique individuals
  - In the 2014 panel, you only need the sample unit identifier (SSUID) + the person number (PNUM)
- Can identify unique households with sample unit identifier (SSUID) + the household residence ID (ERESIDENCEID)
- We will discuss identifying families in a subsequent webinar

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File Operation Basics

What observations do you need?

- Individuals: Keep all respondent observations in your sample universe
  – Determine whether you need 1 observation per person or all 12
- Households: Keep 1 observation per household
  – Household heads are the "owner or renter of note"
  – Use ERELRPE in (1, 2)
- Families: Keep 1 observation per family
  – RFAMREF = PNUM
- Household and family variables are recorded in each sample member's observation, making life easier

91   *Adapted from Luke Shaefer (2015)*

File Operation Basics

Following people across waves:

- Everyone in the Wave 1 household is considered an Original Sample Person (OSP)
- In subsequent waves, we attempt to interview every OSP, as well as any new people who have moved in with the OSPs
- For OSPs who leave the original household, we will follow them as long as they remain in the survey universe (civilian, non-institutionalized, in the U.S.)

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File Operation Basics

THHLDSTATUS=3 people:

- People who were interviewed in the household in the previous wave who have moved out of the survey universe (Waves 2+ only)
    - Into institutional group quarters
    - Into military barracks/active duty
    - Outside of the United States
    - Or have died
- We collect a limited set of information for these people
    - Allows us to impute records for them for the months they are in the household
    - For the months after they leave the household, they are inactive (EPPMIS=0)

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File Operation Basics

THHLDSTATUS=4 people:

- People who were interviewed in the household in the previous wave who have moved into a different household (Waves 2+ only)
    - We were unable to find/interview the new household
- These people are inactive (i.e., we do not collect information on them), but they are available for selection on rosters and in the relationship questions

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File Operation Basics

What file structure do you need?

- Wide: Unstacked data have each variable in a separate column
- Long: Stacked data have one column with all of the values for each different variable

- Choice will ultimately depend on your analysis and comfort with manipulating data

- A consideration when working with a single wave, but critical when working with multiple waves

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File Operation Basics

Merging *wide* data:

1) Create (new) wave-specific variable names in Waves 1 and 2 datasets
   - Simply add either a prefix or suffix to existing variable names to distinguish wave
   - Important note: Do NOT make id/merging variables (i.e., SSUID, PNUM, and MONTHCODE) wave-specific.

2) Sort each wave's dataset by SSUID, PNUM, and MONTHCODE

3) Merge Waves 1 and 2 datasets by SSUID, PNUM, and MONTHCODE

SSUID	PNUM	MONTHCODE	TAGE_EHC_w1	TAGE_EHC_w2
000114	101	1	35	36
000114	101	2	35	36
000114	101	3	35	36
000114	101	4	35	36
000114	101	5	35	36
000114	101	6	35	36
000114	101	7	35	36
000114	101	8	35	36
000114	101	9	35	36
000114	101	10	35	36
000114	101	11	35	36
000114	101	12	36	37

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File Operation Basics

Merging *long* data:

1) Modify the value of MONTHCODE in Wave 2 dataset by adding 12
   - Important note: Be sure to save as a new dataset.
2) Sort each wave's dataset by SSUID, PNUM, and MONTHCODE
3) Merge Waves 1 and 2 datasets by SSUID, PNUM, and MONTHCODE

SSUID	PNUM	MONTHCODE	TAGE_EHC
000114	101	1	35
000114	101	2	35
000114	101	3	35
…	…	…	…
000114	101	12	36
000114	101	13	36
000114	101	14	36
000114	101	15	36
…	…	…	…
000114	101	24	37

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File Operation Basics

Weight (WPFINWGT)

- For representative estimates, weights are important because the SIPP:
  1. Oversamples from high poverty areas
  2. Is stratified, not purely random
- Often weights do not affect point estimates appreciably, but sometimes they do!
  - Protect yourself: do it both ways (with/without weights)

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Getting Help:
Resources for Participants

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Supplemental Webinar Material

- Currently available:
  - Presentation slides
  - Sample code for creating wide and long files

- Access materials at:
  https://www.census.gov/data/academy/webinars/2019/sipp-series/2014-panel-overview.html

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Data Resources

- SIPP website:
  - http://www.census.gov/sipp
- Census FTP site:
  - http://thedataweb.rm.census.gov/ftp/sipp_ftp.html
- NBER SIPP page:
  - http://www.nber.org/data/sipp.html

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Technical Documentation

- SIPP website (http://www.census.gov/sipp) is your best resource
- Currently available:
  - Users' Guide
  - Metadata
  - Release notes
  - User notes
  - Codebook
  - Crosswalks (2008-2014 and 2014-2008)

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SIPP Webinar Series

- Next webinar scheduled for **June 4th**
- Will cover Demographics and Residences data in the SIPP
- Learn more at: https://www.census.gov/data/academy/webinars/upcoming.html

U.S. Census Bureau Presents...
SIPP Webinar Series

You will have the opportunity to learn about the different topics and subjects areas in the 2014 SIPP. Each session will provide an overview of key topics using public-use data. This webinar series is for new and experienced users of SIPP data. Here are the topics:

TOPIC:	SESSION DATE:
Overview	June 3, 2019
Demographics and Residences	June 4, 2019
Jobs	June 17, 2019
Assets, Income, and Poverty	June 18, 2019
Programs, Adult Well-Being, and Food Security	June 20, 2019
Health Insurance, Health Care Utilization, and Disability	June 24, 2019
Family and Fertility	June 25, 2019

SAVE THE DATE: All webinars are FREE and start at 2:00 PM EDT

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Q & A and Thank You!

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Merging Waves 1 and 2 Exercises

The objective of this exercise is to merge two waves of data in both (wide and long) formats. The data are stored in data set names **sub_pu2014w1** and **sub_pu2014w2**. The variables in these data sets that you will need to answer the questions are below.

SSUID	Unique household identification number
PNUM	Personal identification number within a household
MONTHCODE	Person-month value of record
TAGE	Age (in years) of respondent
EMS	Respondent's marital status (1=married, spouse present; 2=married, spouse absent; 3=widowed; 4=divorced; 5=separated; 6=never married)
ERACE	Respondent's race (1=white only; 2=black only; 3=Asian only; 4=residual)

Working with wide data

1. Create (new) wave-specific variable names in Waves 1 and 2 subset data sets for the following variables: TAGE, EMS, and ERACE. Be sure to save new data sets for each wave.
   a. Did you create wave-specific variables for SSUID, PNUM, and/or MONTHCODE? Why or why not?
   b. Merge new Waves 1 and 2 data sets created in step above by SSUID, PNUM, and MONTHCODE.

   ✎ *Tips*: Be sure to sort each data set by SSUID, PNUM, and MONTHCODE before merging to ensure records are merged correctly.

Working with long data

2. Modify the value of MONTHCODE in Wave 2 subset dataset by adding 12. Be sure to save as a new dataset.
   a. Why should data users add 12 to MONTHCODE when using Wave 2 data? How would this value change for Wave 3 or Wave 4 data sets?
   b. Why didn't you modifying the value of MONTHCODE in Wave 1 subset data set?
   c. Did you create wave-specific variables for TAGE, EMS, or ERACE? Why or why not?
   d. Merge new Wave 2 data set with Wave 1 subset data set by SSUID, PNUM, and MONTHCODE.

   ✎ *Tips*: Be sure to sort each data set by SSUID, PNUM, and MONTHCODE before merging to ensure records are merged correctly.

```sas
                        /*** SAS Code ***/

/*** Merging 2014 SIPP Waves 1 and 2 public use files ***/

/* Wave 1 */
libname sippw1 "<PUT PATHNAME HERE>";

/* Wave 2 */
libname sippw2 "<PUT PATHNAME HERE>";

/**********************/
/** MERGE Exercise #1 **/
/**********************/

/*** Merging WIDE data ***/

/* Wave 1 */

/** A **/
data mergew1; set sippw1.pu2014w1; /* 2014 SIPP Wave 1 public
use dataset */
run;

%let wave=w1;
proc datasets lib=work nolist;
  modify mergew1;
  rename
EBORNUS=EBORNUS_&wave
ECOGNIT=ECOGNIT_&wave
EDAYCARE=EDAYCARE_&wave
EDAYHS=EDAYHS_&wave
EORIGIN=EORIGIN_&wave
/*MONTHCODE=MONTHCODE_&wave*/ /* merging variable's names do not
need to be wave-specific */
/*PNUM =PNUM_&wave;*/ /* merging variable's names do not need to
be wave-specific */
/*SSUID =SSUID_&wave;*/ /* merging variable's names do not need
to be wave-specific */
;
  run;
quit;

proc sort data=mergew1;
    BY SSUID PNUM MONTHCODE;
run;
```

```
/* Wave 2 */

data mergew2; set sippw2.pu2014w2;
run;

%let wave2=w2;
proc datasets lib=work nolist;
  modify mergew2;
  rename
EBORNUS=EBORNUS_&wave2
ECOGNIT =ECOGNIT_&wave2
EDAYCARE =EDAYCARE_&wave2
EDAYHS =EDAYHS_&wave2
EORIGIN =EORIGIN_&wave2
/*MONTHCODE=MONTHCODE_&wave2*/ /* merging variable's names do
not need to be wave-specific */
/*PNUM =PNUM_&wave2;*/ /* merging variable's names do not need
to be wave-specific */
/*SSUID =SSUID_&wave2;*/ /* merging variable's names do not need
to be wave-specific */
;
  run;
quit;

proc sort data=mergew2;
    BY SSUID PNUM MONTHCODE;
run;

/** B **/
/* Merge Waves 1 and 2 */
data merge1;
    merge mergew1(in=x) mergew2(in=y);
    BY SSUID PNUM MONTHCODE;
    if x=1 | y=1; /* in Waves 1 or 2 */
run;


/********************************************************************
*********************************/
/** Alternative code for creating WIDE data -- first merge LONG
data, then reshape to WIDE data **/
/**  Data users can create a wide dataset by monthcode rather
than wave-based (as shown above)  **/
/********************************************************************
*********************************/

/*** Merging LONG data ***/
```

```
/* Wave 1 */
data merge1w1; set sippw1.pu2014w1;
run;

proc sort data=merge1w1;
    BY SSUID PNUM monthcode;
run;

/* Wave 2 */
data merge2w2; set sippw2.pu2014w2;
run;

data merge2w2; set merge2w2;
    monthcode=monthcode+12; /* Add 12 to monthcode so values
represent months 13-24 (i.e., Jan 2014 - Dec 2014) */
run;

proc sort data=merge2w2;
    BY SSUID PNUM monthcode;
run;

/* Merge Waves 1 and 2 */
data merge2;
    merge merge1w1(in=x) merge2w2(in=y);
    BY SSUID PNUM MONTHCODE;
    *if x=1 & y=1;
run;

proc sort data=merge2;
    BY SSUID PNUM MONTHCODE;
run;


/* reshape data wide from long -- Two options: (1) Proc
transpose, or (2) Array statement in data setp */

/* Option #1 */
proc transpose data=merge2 out=wide2a prefix=EBORNUS;
    BY SSUID PNUM;
    id monthcode;
    var EBORNUS;
run;

proc transpose data=merge2 out=wide2b prefix=ECOGNIT;
    BY SSUID PNUM;
    id monthcode;
```

```
      var ECOGNIT;
run;


proc transpose data=merge2 out=wide2c prefix=EDAYCARE;
      BY SSUID PNUM;
      id monthcode;
      var EDAYCARE;
run;


proc transpose data=merge2 out=wide2d prefix=EDAYHS;
      BY SSUID PNUM;
      id monthcode;
      var EDAYHS;
run;


proc transpose data=merge2 out=wide2e prefix=EORIGIN;
      BY SSUID PNUM;
      id monthcode;
      var EORIGIN;
run;


data merge3;
      merge wide2a(drop=_name_ _label_) wide2b(drop=_name_
_label_) wide2c(drop=_name_ _label_) wide2d(drop=_name_ _label_)
wide2e(drop=_name_ _label_);
      BY SSUID PNUM;
run;



/* Option #2 */
/* Alternative code for reshaping data back to wide from long */
data merge3;
      set merge2;
      BY SSUID PNUM;
      /* Array and do loop range from 1 to 24 because it
represents the number of months in reference periods in Waves 1
and 2 */
      ARRAY aebornus(1:24) EBORNUS1 - EBORNUS24;
      ARRAY aecognit(1:24) ECOGNIT1 - ECOGNIT24;
      ARRAY aedaycare(1:24) EDAYCARE1 - EDAYCARE24;
      ARRAY aedayhs(1:24) EDAYHS1 - EDAYHS24;
      ARRAY aeorigin(1:24) EORIGIN1 - EORIGIN24;

      if first.PNUM then do;
          DO i = 1 to 24;
                aebornus(i)=0;
                aecognit(i)=0;
```

```
            aedaycare(i)=0;
            aedayhs(i)=0;
            aeorigin(i)=0;
       END;
   END;

   aebornus(monthcode)= ebornus;
   aecognit(monthcode)= ecognit;
   aedaycare(monthcode) = edaycare;
   aedayhs(monthcode) = edayhs;
   aeorigin(monthcode) = eorigin;
   if last.PNUM then output;
run;
```

```
                          /*** Stata Code ***/


/*** Merging Wave 1 and 2 wide data ***/

/*** Merging wide Wave 1 and 2 datasets AFTER modifying variable
names ***/
use "<PUT PATHNAME HERE>" /* read in Wave 1 master dataset */


/** A **/

     /* Adds suffix to select variable names in Wave 1 dataset
*/

/* OPTION #1: Adds suffix to select variable names in dataset */
/*
foreach x of var ebornus eeduc eehc_mvmo eehc_why{
    rename `x' `x'_w1
}
*/

/* OPTION #2: Adds suffix to all variables names in dataset */
/*
foreach x of var * {
    rename `x' `x'_w1
}
*/

foreach x of var ebornus eeduc eehc_mvmo eehc_why{
    rename `x' `x'_w1
}

sort ssuid pnum monthcode /* sort modified Wave 1 master dataset
by SSUID and PNUM */

save "<PUT PATHNAME HERE>" /* save modified Wave 1 master
dataset as different name at specified location */

clear all

use "<PUT PATHNAME HERE>" /* read in Wave 2 master dataset */

     /* Adds suffix to select variable names in Wave 2 dataset
*/
foreach x of var ebornus eeduc eehc_mvmo eehc_why{
    rename `x' `x'_w2
}
```

```
sort ssuid pnum monthcode /* sort modified Wave 2 master dataset
by SSUID and PNUM */

/** B **/

/* Merge modified Wave 1 and modified Wave 2 datasets*/
/* code merges by ssuid pnum */
/*use "PUT PATHNAME HERE"*/ /* read in modified Wave 1 dataset
from specified location */

merge 1:1 ssuid pnum monthcode using "<PUT PATHNAME HERE>" /*
using dataset is the modified Wave 2 master dataset */
```

```
                        /*** SAS Code ***/


/*** Merging 2014 SIPP Waves 1 and 2 public use files ***/

/* Wave 1 */
libname sippw1 "<PUT PATHNAME HERE>";

/* Wave 2 */
libname sippw2 "<PUT PATHNAME HERE>";

/*********************/
/** MERGE Exercise #2 **/
/*********************/

/*** Merging LONG data ***/

/* Wave 1 */
data merge1; set sippw1.pu2014w1; /* 2014 SIPP Wave 1 public use
dataset */
run;

proc sort data=merge1;
    BY SSUID PNUM monthcode;
run;

/** A **/
/* Wave 2 */
data merge2; set sippw2.pu2014w2; /* 2014 SIPP Wave 2 public use
dataset */
run;

data merge2; set merge2;
    monthcode=monthcode+12; /* Add 12 to monthcode so values
represent months 13-24 (i.e., Jan 2014 - Dec 2014) */
run;

proc sort data=merge2;
    BY SSUID PNUM monthcode;
run;

/* NOTE: For Waves 3 and 4, data users would add 24 (in Wave 3)
and 36 (in Wave 4) to monthcode to indicate month since 2014
Panel started */

/** B **/
/* NOTE: Wave 1 data already display months 1-12, so there's no
need to add 12 to monthcode */
```

```
/** C **/
/* NOTE: No need to create wave-specific variables because data
user wants all observations for a variable in one column */

/** D **/
/* Merge Waves 1 and 2 */
data merge3;
     merge merge1(in=x) merge2(in=y);
     BY SSUID PNUM MONTHCODE;
     *if x=1 & y=1;
run;

proc sort data=merge3;
     BY SSUID PNUM MONTHCODE;
run;
```

```
                    /*** Stata Code ***/

/*** Merging Wave 1 and 2 long data ***/

/*** Merging long Wave 1 and 2 datasets AFTER modifying
monthcode variable value ***/
use "<PUT PATHNAME HERE>" /* read in Wave 1 master
dataset */

sort ssuid pnum monthcode /* sort Wave 1 master dataset
by SSUID, PNUM, and MONTHCODE */

save "<PUT PATHNAME HERE>" /* save Wave 1 master
dataset as different name at specified location */

clear all

use "<PUT PATHNAME HERE>" /* read in Wave 2 master
dataset */

/** A **/
replace monthcode=monthcode+12
label variable monthcode "Monthcode + 12, Wave 2"

tab monthcode, m /* values of monthcode should range
from 13 to 24 in Wave 2 */

sort ssuid pnum monthcode /* sort Wave 2 master dataset
by SSUID, PNUM, and MONTHCODE */

/* NOTE: For Waves 3 and 4, data users would add 24 (in
Wave 3) and 36 (in Wave 4) to monthcode to indicate
month since 2014 Panel started */

/** B **/
/* NOTE: Wave 1 data already display months 1-12, so
there's no need to add 12 to monthcode */
```

```
/** C **/
/* NOTE: No need to create wave-specific variables
because data user wants all observations for a variable
in one column */

/** D **/
/* Merge Wave 1 and modified Wave 2 datasets*/
/* code merges by ssuid pnum monthcode */
merge 1:1 ssuid pnum monthcode using "<PUT PATHNAME
HERE>" /* using dataset is the Wave 1 master dataset
because Wave 2 is in working memory */

sort ssuid pnum monthcode
```